

locally common, as in mountains between Miller House and the White Mountains. It became scarcer about July 20, and was seen last on August 14.

Ixoreus naevius meruloides. NORTHERN VARIED THRUSH.—A few were found nesting in the thick spruce forest along Fossil Creek in July at 2000 ft. elevation.

Saxicola œnanthe œnanthe. WHEATEAR.—The bird has the same habitat as the Pipit and, like it, flits from rock to rock on the mossy slopes above timber-line. Young just learning to fly, July 15. Not seen in flocks.

NOTES ON SOME BIRDS OF THE OKANAGAN VALLEY, BRITISH COLUMBIA.

BY J. A. MUNRO.

Æchmophorus occidentalis. WESTERN GREBE.—Migrant and scarce winter resident; April 23, 1911, is the earliest spring record. In the spring of 1914 they were very plentiful. May 12 was a warm still day, without a breath of wind or a ripple on the surface of the lake; from the shore near Okanagan Landing, one can see down the lake for five miles, to where a rocky point interrupts the view. Small bands of Western Grebe were scattered everywhere, the sun glittering on their white under-parts. I estimated that there were eight hundred, on this small portion of the lake. In the fall, they are less common and more regular in their appearance. The earliest record of arrival is September 5, and the latest, September 28.

Colymbus holbœlli. HOLBELL'S GREBE.—Abundant summer resident: a few winter on Okanagan Lake. During April, flocks of these birds congregate on Okanagan Lake, keeping well out from the shore, and engage in a noisy courtship, attended by much splashing and diving. For several weeks, their yelping call can be heard day and night. They breed in suitable places on all the marshy lakes of this district; frequently nests are found within thirty feet of each other, but I have never found them breeding in colonies. On May 15 and June 8, 1916, ten nests were found in the tules, fringing an alkaline lake. In every case there was a Coot's nest within a few yards.

Larus argentatus. HERRING GULL.—A common winter resident on Okanagan Lake; they make daily trips the length of the lake, following the steamer. Unlike the Herring Gulls of the Great Lakes or the sea-coast, these birds are quite wary; it is generally impossible to get within gunshot range. Several times I have watched them following a flock of

feeding Loons, swimming beside them and when left behind by the faster moving Loons, rising from the water and flying to the centre of the flock again. It seems hardly possible that they would be able to steal fish from such a strong, active bird as the Loon.

Larus philadelphia. BONAPARTE'S GULL.—Common migrant, much more numerous in the spring, when they arrive in a body and remain only two or three days. Stragglers during the spring migration are unusual. In 1912, 1913 and 1914, they arrived at Okanagan Landing on May 4; in 1915 on May 5, and in 1916, twenty appeared on April 29, and the large flock arrived again on May 4. May 12 is the latest spring record. The fall migration is more irregular; juvenals arriving about the middle of August and adults a little later. They are seen until the middle of September, September 20 being the latest record. There are occasional stragglers in the summer; an adult in breeding dress and two juvenals being noted on July 20, 1915, and on July 22, 1917, an adult in breeding dress was collected.

Usually they are quite fearless; and on a still spring day I paddled into a flock of about one hundred, on Okanagan Lake. They rode buoyantly on the surface, wing-tips and tail touching, and held high above the body. Their method of feeding suggested the Northern Phalarope, swimming in a jerky fashion from side to side and picking minute objects off the water. Their voices were soft and resonant, like a note struck with the fingers, on the muted string of a violin.

Grus mexicana. SANDHILL CRANE.—Common migrant, occasionally breeds. The large flocks seldom stop in the spring but sometimes do so in the fall. October 4, 1917 was a violently windy day and a large number of Cranes both *G. mexicana* and *canadensis* were forced to alight on some open range-land near Okanagan Landing, where they remained until shot at.

In the evening of May 20, 1915, a flock of fifty-seven flew north over Okanagan Lake. They moved for a time in a compact flock, and then strung out in single file. Sometimes they flew in the form of the letter U, a half circle, and again the flock took the form of the letter S.

Dendragopus obscurus richardsoni. RICHARDSON'S GROUSE.—Abundant resident in normal years. Their numbers were greatly reduced during the past two years, by cold, wet springs and the ravages of an intestinal parasite.

The Blue Grouse begin to mate about the end of March, when the snow has melted from the lower hills. The males are then quite fearless and one can walk to within a few feet of the hooting birds. While calling, the body is flattened and held close to the ground, the wings are dropped, the head is sunk between the shoulders and the widely spread tail is held at right angles to the body. When they are in this position the fan-like tail entirely conceals the body from one standing behind the bird. The feathers on the neck are folded back, showing the white underparts in vivid contrast to the naked, orange-red, palpitating skin of the air-sacs. The sacs can

be seen to rise and fall as the bird draws in air and then slowly lets it out. The combs are brilliant yellow and much swollen. While inflating the air-sacs the bill is held wide open. The mating call might be rendered as, whoo, "whooh whooh-oo, whooh whooh, whooh." Unlike the Blue Grouse of the coast region, this call is soft and has no great carrying power. There is also a single note, "hoop," that can be heard for a great distance. I have never been able to discover if it is the male or the female that uses the single hoot. After calling, the male may strut a few yards, in the same attitude as described, and with breast almost touching the ground. They then look more like a mammal than a bird. While mating, the males are utterly indifferent to danger and many are killed by coyotes and goshawks.

The eggs are laid early in May. The nests are usually shallow depressions in the ground, lined with pine-needles and a few feathers; some have little or no lining. A favorite site for the nest is on a bunch-grass bench, on a steep mountain side, close to pine or fir trees. Sometimes they build on the loose sand under a pine tree. One nest found on May 13, 1915, and containing nine partly incubated eggs, was under the "A" of a rail fence close to a wagon road, through open woods of yellow pine. The following year I found a nest with ten eggs, under the same fence, close to where the first one had been located.

May 31 is the earliest record for newly hatched young. There is considerable mortality in the young birds and several weeks after hatching the coveys have generally dwindled to six or eight. They grow fast and when the size of Meadowlarks will fly as straight and true as a Quail. When a covey of young is flushed the female will not rise until the young have alighted in the nearby trees. When in the trees they assume the characteristic attitude of the adult, standing parallel to the branch, with tail slightly raised.

The young are full grown by August 15. They leave the timbered country shortly before this to feed on grasshoppers along the margins of wooded draws and coulees, on the open range. During the middle of the day they can be seen, sunning themselves on some rock in a prominent place where they can watch for enemies. They are quite tame at this season and as one approaches a feeding covey, they will stiffen and remain in rigid postures until one is within a few yards, and then rise and fly into the nearest tree.

About September 1, the coveys begin to "pack" and are then found principally in the stands of yellow pine (*Pinus ponderosa*). They are then feeding chiefly on the large oily seeds of this tree, picking them off the ground underneath the trees. They still eat many grasshoppers, catching them in the open places, early in the morning while the insects are sluggish. When the supply of fallen pine seeds is exhausted, they eat rose hips, snowberries and red and black haws.

About the middle of October, the packs go into the thick stands of Douglas fir and remain there until the spring, eating fir needles exclusively. Their flesh becomes impregnated with the flavor of fir and is quite uncatable.

If not disturbed too much they will remain in the same clump of trees all winter, not coming to the ground for days at a time. They sit very close and often will not leave the trees until one throws stones or branches at them. The ground under one of these roosting trees, in the spring, resembles a poultry yard with accumulation of droppings.

During October, Blue Grouse become quite wild. When flushed they invariably fly down hill and alight in thickly foliaged firs or pines. Until one knows what to look for, they are very hard to find in these trees. They stand parallel with the branch, perfectly rigid, neck stretched, tail closed and slightly elevated—a strained and most ungraceful pose.

They are fond of sitting on rocky ledges or slide rock, on sunny days, and match the color of the rocks so perfectly that one seldom sees them until they flush. A Blue Grouse thundering down a steep mountain-side, through heavy timber, affords the most difficult sporting shot of any Canadian Grouse.

Circus hudsonius. MARSH HAWK.—Common summer resident; a few remain through the winter. Two nests were found in the tules on the shore of Swan Lake.

May 15, 1916. Five eggs, incubation advanced. Nest in a clearing in the tules, about four feet square, that had been trampled down by the bird; composed of a pile of grass and weed stalks on a foundation of sticks, that raised the nest above the wet ground. The grass was placed all the same way, a shallow depression at one end held the eggs.

May 18, 1916. Three fresh eggs, one a third larger than the others, nest similar to number one, but slightly smaller.

Several times I have seen a Marsh Hawk strike at a Sandpiper. A female shot in September, 1912, had the remains of two Solitary Sandpipers in her stomach. On a foggy September morning, I once saw a Marsh Hawk dash into a flock of Green-winged Teal and try, unsuccessfully, to lift one from the water.

Buteo borealis calurus. WESTERN RED-TAIL.—This is the characteristic hawk of the lower mountains. They are equally at home in the dense coniferous forests at the edge of cultivated land, in the open park country of the yellow pine (*Pinus ponderosa*) or in the midst of deep canyons and rock cliffs.

The Red-tail arrives in the Okanagan early in May and leaves in October. I have no winter records. Various small mammals, such as ground squirrels (*Citellus*), pine-squirrels (*Sciurus*), and pikas (*Ochotona*), afford an ample food supply and one would expect Buteos and raptores generally, to breed here in large numbers; but such is not the case. Red-tails are probably the most common of the larger hawks (except during the periodic invasions of Swainson's Buzzards in big grasshopper years) but they are not abundant, and one does not see the large migrations that are a feature of the coast-belt of British Columbia.

The same nests are used for several years, usually built in tall coniferous trees, forty to sixty feet above the ground. A site commanding a view of open range or valley is preferred. The following nests are typical.

May 22, 1917. A large, bulky nest of sticks lined with black tree-moss (*Alcatoria jubata*) and some down from the birds' breasts; forty feet from the ground in a tall Douglas fir, free of branches for the first twenty-five feet. This was in open woods of Douglas fir and yellow pine, overlooking a small creek and a wide area of hay land. The three partly incubated eggs were chalky-white, sparingly blotched with pale brown. Both birds alighted in nearby trees and did not fly over the nest or make any hostile swoops at the collector.

May 28, 1917. Nest twenty-two inches in diameter, made of spruce sticks and lined with spruce twigs and pale green tree-moss or lichen (*Evernia vulpina*). This was at the top of a spruce, broken off, sixty feet from the ground. The rather heavy spruce sticks composing it rested on the broken portion of the tree and on the thick limbs directly below. The spruce was a solitary one, at the edge of a cottonwood forest, bordering a stream and pasture land, in a deep, narrow valley. There were two eggs, in an advanced stage of incubation; one was nearly pure white and the other faintly blotched with light brown. The male had been shot two weeks before. While the tree was being climbed, the female sat in a cottonwood forty yards away and screamed repeatedly but did not come any closer to the nest.

The following notes refer to a pair of Red-tails that had their eyrie on the face of a sheer cliff, three hundred feet high. As well as I could see with binoculars, the nest was made entirely of sticks and was built, none too securely, on a small ledge, fifty feet from the top of the cliff. This cliff formed one side of a deep canyon, along the base of a steep, rugged mountain. Both sides of the canyon, below the cliffs, were piled high with slide-rock, the home of hundreds of Pikas (*Ochotona*). The top of the lowest side of the canyon was fringed with tall Douglas fir and Murray pine. On the other side, back of the three-hundred-foot cliff containing the eyrie, the mountain rose, almost sheer, for another six hundred feet.

June 8, 1915. On this date, when the eyrie was first discovered, there were two or three young, just emerging from the down — their heads could be seen above the rim of the nest. The female was kept under observation for several hours and did not fly to the nest. The male was heard in the distance but did not come into the canyon. The female was greatly excited, flying in short circles over my head and screaming constantly. She frequently alighted on the top of a dead, stunted fir, in the canyon, below the eyrie. A pair of Western Robins attacked her several times and drove her from the tree.

May 27, 1916. I was unable to visit the eyrie again until the following year. On May 27, there were two downy young. The old birds were more hostile than in the previous year. When I first entered the canyon, the male was flying about the face of the cliff, screaming fiercely, a long-drawn-out hissing scream, like the escape of exhaust steam from a locomotive. As I scrambled over the talus at the foot of the cliff, he swooped at me several times from a great height, slanting down at tremendous speed

on set wings, with a loud tearing noise; when close over my head, he would stop short, and then mount straight into the air, head first, in a "climbing" position. After rising in this fashion for twenty or thirty feet, he would assume a normal position and mount in a succession of spirals. The female appeared with a large snake twisting in her claws and flew straight to the nest, not having seen me. After a few minutes spent in the nest, she joined the male and they both flew into one of the firs on the top of the canyon. It was impossible to see what disposition she made of the snake.

Shortly after this, one of the young raised itself above the rim of the nest and after flapping its naked wings several times, raised itself over the nest rim and ejected a stream of excreta down the face of the cliff.

No refuse, which would have told of their food habits, was found below the nest, but it is probable that Pikas formed a large portion of their diet.

July 31, 1916. The two young were seen, soaring over the canyon.

Buteo swainsoni. SWAINSON'S HAWK.—Regular summer resident, arriving about the middle of April and leaving in August; the latest record is September 6, I have no winter records.

During the summers of 1913, 1914 and 1915, there was a serious local irruption of large crickets and grasshoppers. These were found in countless hordes on the open range, overlooking the city of Vernon, and ate every green thing on the hills. In the summer of 1915, I noticed that they were attacked by a reddish colored parasite that clustered on the head and thorax. This must have killed great numbers, as they were not so plentiful the following two years. During July and August when grasshoppers were most abundant, the Swainson's Buzzards gathered in unusual numbers, for this country, and fed exclusively on these insects. Juveniles were in the majority but there was a sprinkling of adults, some of them in the dark phase.

Three juveniles collected on July 15, 1915, were in the spotted plumage and were moulting the secondary feathers on the wings. Adults collected were in various stages of moult. Their stomachs were distended with crickets and grasshoppers. These insects, when they are available, seem to be preferred to any other food. Their abundance and the ease with which they are captured, is suitable to the rather sluggish temperament of this Buteo. They occasionally take birds, as Major Allan Brooks found seven downy Ruffed Grouse in the crop of a breeding female; but I think they catch fewer small mammals than does the Red-tail.

On July 16, 1914, I saw a flock of forty in all plumages, on the open range. Some were wheeling and circling close to the ground, others were standing, gorged, on fence posts, in the grass, and on the face of a small butte.

While hunting, they are often persecuted by Kingbirds, both *Tyrannus tyrannus* and *verrucalis*. In trying to escape from their tormentors, they sometimes turn completely over, sideways, in a "loop the loop" movement. I once saw two Swainson's Buzzards fly towards each other, fasten their claws together and drop several yards, rolling over and over.

Asio wilsonianus. LONG-EARED OWL.—On April 19, 1917, I found a female occupying a new crows' nest and sitting on one egg. Broken crow's eggs on the ground below the nest indicated that she had evicted the original owners. On April 30, the crows were again in possession and the nest contained four crow's eggs. The owl then laid four eggs in an old crow's nest, fifty yards from the first one. These eggs were collected on May 8, and the owl moved to a third crow's nest in the same patch of brush. On June 23, the nest contained two half-grown young.

Glaucidium gnoma gnoma. PYGMY OWL.—Common resident. This is the easiest of the owls to call. They will come readily at any time of the day, and from long distances to an imitation of their call. They approach the caller with short flights, from one tree-top, to another slightly nearer. When in a tree directly over the caller's head, a further call will bring them down to the lower branches, often within a few yards. Often two or more will come from different directions. On Vancouver Island I once called up four at one time. They are usually followed by an excited crowd of Chickadees, Nuthatches and other small birds, that keep darting at the owl as long as it is in the open. When answering the call, they usually sit in a conspicuous position, at the top of a tree or on a dead branch. The Pygmy Owl must be one of the greatest enemies of small birds, as an imitation of its call will excite every bird in the neighborhood, while they pay little attention to the call of a "Scops" owl or a Saw-whet.

The only nest I have found was in an old woodpecker's hole, thirty-five feet above the ground in a western larch. There were seven downy young in this nest. This was in a thick forest of Murray pine, Douglas fir, and western larch, where they are more plentiful than in the yellow pine stands at lower altitudes.

Picoides americanus fasciatus. ALASKA THREE-TOED WOODPECKER.—This species is resident and fairly common in Murray pine, Western larch, and spruce forests. I have never found them in yellow pine or Douglas fir country. They prefer the burnt areas of timber, and specimens collected are generally stained with charcoal on the under-parts. During the nesting season the males call with a rippling tattoo from the very top of the tallest dead tree, near the nesting tree. This calling is usually done in the early morning. On May 28, 1917, I found a nest that had just been finished, thirty feet from the ground in a dead Murray pine. The entrance was smaller than would be expected, slightly over one and a half inches, and the hole about fourteen inches deep. No eggs had been laid and as I had to leave the locality that day I was unable to revisit the nest. A half grown male collected on June 17, 1916, showed a few scattered yellow feathers on the crown.

Stellula calliope. CALLIOPE HUMMINGBIRD.—This hummer frequently nests in the same tree for several years in succession. A dead lichen covered branch of maple or birch is often chosen. The nests straddle the branch, and I have never seen one that was pensile. The two nests described were probably lower down than is usual.

June 6, 1911. Two eggs, incubation started. Nest twenty feet from the ground on a drooping branch of a dead maple, in a birch and maple draw in the mountains. Outside of nest composed of lichen and small shreds of moss, presenting a ragged appearance from below. The lining was of felted cottonwood down. This nest was discovered through the angry, excited actions of the female. She buzzed around my head, as I approached the tree, and would not leave the vicinity of the nest.

June 30, 1916. Found female sitting on two partly incubated eggs. Nest of lichen and plant down, and lined with plant down; saddled on a small dead twig of a Douglas fir, on the outside of the tree, seven feet above the ground. A few inches above the nest was a thick spray of live fir, effectually shielding the sitting bird from the hot sun. This was on a steep, rocky mountain side among thick timber.

A birch and maple draw is the favorite home of *Stellula calliope*, and one can often see six or eight, buzzing around a birch tree, which a Red-naped Sapsucker has girdled.

Tyrannus verticalis. WESTERN KINGBIRD.—Common summer resident. The earliest record during seven years is April 25, 1911, and the latest May 13, 1912. Their departure in the fall is more uniform; August 17, 1911, being the earliest and August 27 the latest. In five other years, there was a difference of only three days in their departure, August 20 being an average date.

They nest in most curious places. For two seasons, a pair built in the eaves-trough of my house, directly over the vent. Both years the eggs were destroyed by rain storms and washed into the rain barrel. A window ledge is a favorite nesting site. The residents along some of the country roads nail up small soap or starch boxes on their gate-posts for the reception of milk bottles, etc.; these are frequently used as nesting sites. I have known them to build on a ledge above the kitchen door of a farm house, which was opened and shut fifty times during the day. Frequently they use abandoned Flicker holes, or the roughened, decayed top of a fence post.

The nests are well made of roots, weed-stalks, string, etc., lined with plant down and horsehair or sheep's wool when it can be found. Four is the usual number of eggs laid.

Sayornis sayi. SAY'S PHOEBE.—Summer resident, much more common the past three years. A nest containing young, found on May 25, 1916, was built largely of dry, lace-like *Potamogeton*, that had been washed up on the beach and bleached white by the sun. The nest was inside a vacant tent, on a wooden cross-support, near the door.

Myiochanes richardsoni richardsoni. WESTERN WOOD PEWEE.—Common summer resident; the earliest record is May 9, 1916, and the latest departure September 13, 1915. They breed commonly along roadsides, preferably in aspens (*Populus tremuloides*). They are late in breeding. The earliest record for a full complement of eggs is June 22, 1916. The nests are usually rather flimsy, made of plant fibres, fine weed stalks, cobwebs and perhaps a few pieces of lichen. They are usually built

saddle fashion on a rather large limb, generally at a crotch, but I have found two that were built in upright forks like a Yellow Warbler's nest. These two nests were in half-dead peach trees in an orchard.

On June 20, 1911, a nest with four eggs was found in black cottonwood (*Populus trichocarpa*) on the lake shore. The eggs were eaten and the nest partly destroyed, probably by a White-footed Mouse. They built another nest in the same tree, and, on July 4, I collected the nest and three eggs. While climbing the tree, the female flew past my face several times, snapping her mandibles. This pair then built a third time in a poplar a few yards from the cottonwood and the nest was completed in three days. I was unable to follow the vicissitudes of this family any further.

Pica pica hudsonia. MAGPIE.—Abundant resident in the river bottoms and on the yellow-pine benches but are less common in the forests. Little good can be said of these birds; they are probably the worst egg thieves of all the Corvidæ. If one leaves any game cached in the woods they are sure to find it and eat the greater portion. In trapping small mammals in a Magpie country one must go over the trap line frequently or many specimens will be eaten. I received a reliable report of a small band of Magpies that had picked large holes in the backs of several young shoats. Their habit of raising a hue and cry, after any owl that makes its appearance, is sometimes of great use to the collector. As they raise large broods, laying six to eight eggs, and have few natural enemies they are increasing rapidly.

Except in the nesting season, they are exceedingly wary and well able to look after themselves. Frequently they are caught in traps set for mink and very often in coyote traps, set near a carcass. They are easily taken by poisoned baits.

In the spring, they have the Cowbird habit of walking over range horses' backs and picking off the fat wood-ticks.

They usually nest in colonies, in patches of nearly impenetrable Black Haw (*Crataegus douglasii*) or in brushy coulees, on open hillsides. The following nest can be taken as typical.

May 14, 1915. Seven fresh eggs; nest of mud and sticks lined with grass and fine roots, eight feet from the ground and near the top of a Black Haw. The outer covering of the nest, about three and one half feet in height, made of thorny Black Haw branches, with an entrance at each side, six inches above the nest proper.

The birds return to the same locality every year and repair the old nests, if they are not too dilapidated. April 22 is the earliest record for a full set of eggs.

When the young are nearly full grown, they gather in large flocks on the bare hillsides and feed on grasshoppers and crickets. This of course is in their favor but cannot balance their evil deeds.

Nucifraga columbiana. CLARK'S NUTCRACKER.—Resident; their abundance depending on the seed crop of the Yellow Pine (*Pinus ponderosa*). Like all corvine birds, they are exceedingly curious and a passing deer or coyote will attract their attention so that the position of game can

often be located by their excited cries. They come readily to an imitation of the call of the Pygmy Owl or the Horned Owl and will investigate the caller at close range.

Their food is largely the seed of the Yellow Pine during the fall and winter but they are omnivorous at other seasons. I once saw a single bird feeding on the carcass of a Bushy-tailed Wood Rat (*Neotoma columbiana*), Mr. C. De B. Green tells me they have the corvine habit of eating birds' eggs. Several nests of Hermit Thrushes, Horned Larks and Pipits, that were under observation, above timber line on Apex Mountain, were destroyed by a pair of Clarke's Nutterackers.

Three nests were found on March 9, 1912, by Major Allan Brooks, assisted by the writer. This was in Yellow Pine country; a series of wooded benches overlooking Okanagan Lake. There was some snow on the ground, the days were warm, with bright sunshine and the nights were frosty.

Number one. Nest loose and bulky, of rotten wood and desiccated pine grass on a platform of stout pine twigs; fifty feet from the ground and eight feet from the trunk, in a Yellow Pine. The female was sitting on two fresh eggs.

Number two. Nest of the same materials as number one. Forty feet above the ground in a Yellow Pine. Female sitting on two fresh eggs.

Number three. Twenty-five feet from the ground and twelve feet from the trunk of a Douglas Fir. This nest was found by watching one of the birds gathering sheep's wool that had caught on a barbed wire fence, and carrying it to the nest. The three partly incubated eggs were collected ten days later. The young are faintly spotted with white on the underparts.

Pipilo maculatus montanus. SPURRED TOWHEE.—Common summer resident. I have a report from a reliable observer, of a single bird, wintering at Sunnywold, fifteen miles south of Okanagan Landing; and a bird seen here on February 17, 1917, had probably been in the vicinity all winter. March 20 is the average date of their arrival and October 10 of their departure. They raise two and possibly three broods; the earliest date for a full set of eggs is May 3, 1916. A nest found on July 22, 1913, containing newly hatched young was possibly a third brood.

Juveniles in various stages of moult swarm in all the patches of brush, along the lower hills from the last of May until September. The irides of the young are first bluish, practically without color, then hazel and later dull orange.

The alarm note of the adults is similar to the Catbird's "meow."

The situation and material of the following nest is typical.

May 19, 1917. Four eggs; incubation started; nest on the ground near shore of lake and thicket of hawthorns; made of the inner bark of cottonwood, wild sunflower and other weed stalks and lined with dry grass.

Myadestes townsendi. TOWNSEND'S SOLITAIRE.—Common resident nesting on the ledges and crevices of rock bluffs. On June 11, 1917, while motoring along a narrow road above the Tulameen River, past a rock

cutting, a Solitaire flew off her nest and passed in front of the car. Her nest was in a small crevice in the rock cutting, five feet above the road, and would have been on the level of a man's eye, walking along the ground. The nest was built of dry grass, twigs, fine roots and moss, lined with fine grass and contained four partly incubated eggs.

The young are slim handsome birds conspicuously spotted with silvery buff on the lower parts, head and back.

The alarm note is similar to the "chuck chuck" of the Hermit Thrush. In a recent number of the Condor,¹ Mr. Forrest S. Hanford states, that during thirteen years, he has heard the Solitaire sing only five times. In this district, they sing quite freely, during the nesting season; generally perched on the very top of a Douglas fir or Murray pine. I have frequently heard them singing in the winter.

In the winter months their food is largely the acrid berries of the dwarf juniper (*Juniperus occidentalis*).

DESCRIPTION OF A NEW SUBSPECIES OF *PIRANGA HEPATICA* SWAINSON.

BY HARRY C. OBERHOLSER.

THE geographic range of *Piranga hepatica hepatica*, as now understood, extends from Arizona to southern Mexico. Examination of a series of 115 specimens of this species in the United States National Museum, including the Biological Survey collection, reveals the existence of an additional and undescribed subspecies from the southwestern United States. This we venture to name

Piranga hepatica oreophasma, subsp. nov.

Chars. subsp.— In general, similar to *Piranga hepatica hepatica*, from central and southern Mexico, but larger, with a relatively somewhat smaller bill; male with upper-parts darker, the back also more reddish, and ventral surface more deeply colored; female with upper and lower parts rather darker, the back averaging also somewhat more grayish (less greenish).

¹ Vol. XIX. January-February, 1917, page 13.